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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,721	06/25/2001	James S. Huston	P 23,611-A USA	2094

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EXAMINER	
LIETO, LOUIS D	

ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/888,721	HUSTON ET AL.	
	Examiner	Art Unit	
	Louis D. Lieto	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) *9-15,17-19,23-25,27,28 and 30-52* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,16,20-22,26 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's arguments filed 10/07/2005 have been fully considered but they are not persuasive. The amendment has been entered. Claims 1-52 are pending.

Applicant amended claims 1,2,17,18,22,30, and 42. The sections of 35 U.S.C. not included in this office action can be found in a previous office action. An action on the merits follows.

Claims 1-8,16,20-22,26 and 29 are currently under consideration.

Claim Rejections - 35 USC § 112

The rejection of claims 4 and 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in view of applicant's amendments to the claims. However this rejection was withdrawn on the basis of applicant's addition of new matter to the claims and may be reinstated in the future.

Claims 1-8,16,20-22,26 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims have been amended so that they now contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original disclosure fails to recite the limitation of at least one domain selected from the croup consisting of: a variable heavy chain domain of an sFv polypeptide and a variable light chain domain of an sFv

polypeptide. Applicants have not indicated where in the specification support for this new limitation can be found. The specification only discloses a single-chain Fv binding protein that includes at least two variable domains (Specification pg. 8). Based on the disclosure as filed a practitioner in the art would not be able to determine that the inventors contemplated any other kind of single-chain Fv binding protein at the time of filing. Therefore, since the specification as filed doe not contain support for the present draft of step A2: at least one domain selected from the croup consisting of: a variable heavy chain domain of an sFv polypeptide and a variable light chain domain of an sFv polypeptide.; it is considered to be new matter. See M.P.E.P. 608.04(a). This new rejection is necessitated by applicant's amendment to the claims. Claims 2-8,16,20-22,26 and 29 depend form claim1.

The rejection of claims 1-8, 16, 20-22, 26 and 29 under 35 U.S.C. 112, first paragraph, is maintained, because the specification, while being enabling for a gene delivery compound comprising a single chain binding polypeptide and a nucleic acid binding moiety, wherein the compound comprises the C6ML3-9 sFv'SP conjugate, which binds to cells expressing the erbB2 surface marker to deliver a tumor suppressor gene *in vitro*, does not reasonably provide enablement for a gene delivery compound comprising a single chain binding polypeptide and a nucleic acid binding moiety, wherein the compound comprises the C6ML3-9 sFv'SP conjugate, which binds to cells expressing the erbB2 surface marker to deliver a tumor suppressor gene to any cell. The specification does not enable any person skilled in the art to which it pertains, or

with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

Response to Arguments

Applicant's arguments filed 10/07/05 have been fully considered but they are not persuasive. Applicant argues that applicant appears to base his rejection on the fact that claimed conjugate can only bind erB2, and that this is irrelevant. Applicant again states that what matters is if the claimed conjugate can be used to deliver a nucleic acid to the antigen of interest on the cell of interest. It is noted that applicant has not provided any guidance on how the claimed compound is to do so when it is only known to bind erb2. Applicant is reminded that the arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness.").

Next applicant argues that the specification enables an in vivo use of the compound because 3T3-HER2 cells (which are known to express erB2) were transfected using the claimed conjugate in the presence of serum, and thus in conditions that mimic *in vivo* conditions. Applicant's argument is absurd. First, HER2 cell lines are invariably cultured in the presence of 10% serum in order to keep them healthy and alive. Secondly, applicant transfected a line of #T# tumor cells that had been stably transfected with HER2. Applicant has not present any evidence to suggest and the art at the time of filing clearly does not support the supposition that these cells mimic the cell surface conditions of any cell as it would appear *in vivo*.

Finally, the examiner understands that applicant's invention comprises the compound and the nucleic acid, however applicant has not shown that the claimed invention can target any cell that does not express erb2 and therefore the compound has no use as gene transfer agent for these cells.

Rejections under the second paragraph of 35 U.S.C. 112:

The rejection of claims 22 and 26 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, is withdrawn in view of applicant's amendments to the claims.

Claim Rejections - 35 USC § 102

The rejection of claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Wagner et al. {Wagner et al. (1990) Proc. Natl. Acad. Sci. USA 87:3410-3414}, is withdrawn in view of applicants amendments to the claims. However this rejection was withdrawn on the basis of applicant's addition of new matter to the claims and may be reinstated in the future.

Claim Rejections - 35 USC § 103

The rejection of claims 1-8, 16, 20-22, 26 and 29 under 35 U.S.C. 103(a), is maintained, as being unpatentable over Wagner et al. {Wagner et al. (1990) Proc. Natl. Acad. Sci. USA

87:3410-3414}, further in view of US Patent No. 5,977,322, hereafter referred to as Marks et al. and of International Patent Application No. WO 00/04922, hereafter referred to as Konadu et al.

Response to Arguments

Applicant's arguments filed 10/07/05 have been fully considered but they are not persuasive. Applicant argues that none of the cited references teach that the gene-delivery compound comprises an effector segment that includes a cysteinyl residue that couples with a nucleic acid binding moiety. Further applicant argues that the reference of Wagner et al. teaches the coupling of a nucleic acid binding moiety via disulfide bonds, which is different from the claimed invention.

First it is noted that applicant's claims read on a compound so the method of making the compound is not relevant if the art teaches or makes obvious the claimed compound. As previously stated. "When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent." See MPEP 2112.01 or In re Best, 195 USPQ 430, 433 (CCPA 1997). It is noted that the use of a product for a particular purpose is not afforded patentable weight in a product claim where the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations are able to stand-alone. The MPEP states that,".. in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art." In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963)(MPEP 2111.02).

Further, applicant's claims do not limit the type of bond formed between the effector segment and the nucleic acid binding moiety. Therefore a disulfide bond will fulfill the claimed bond. Disulfide bonds are used to link cysteines and cysteinyls together, and as taught by Wagner et al. can be used to bind transferrin peptide and the salmon protamine. Two bound cysteines form a unit known as cystine, which are joined by a disulfide bond. In the instant case the claims are drawn to an effector protein crosslink via a cysteinyl to a nucleic acid binding moiety. The claims do not limit the nucleic acid binding moiety to a particular kind of residue. Therefore this limit would be met by the coupling of the cysteinyl residue to a cysteinyl residue via a disulfide bond in the nucleic acid binding moiety.

A cysteinyl residue is an acyl radical of cysteine. A cysteinyl differs from cysteine solely by the absence of a hydroxyl from the carboxyl group. During the formation of a peptide bond between amino acids there occurs what is known as a condensation reaction. This reaction produces a dipeptide bond between two amino acids by joining a carbon from one residue to the nitrogen of another residue. One amino acid loses a hydroxyl group and another loses a hydrogen group, thus water is a byproduct of the reaction. Therefore, by virtue of the formation of peptide chains each individual amino acid lacks a hydroxyl and thus is an amino carboxylic acid. Therefore, any cysteine as a component of the effector peptide is inherently a cysteinyl. Therefore, the rejection based on the art of record as set forth in the office action of 10/07/05 meets all of the limits of the claimed invention.

No claims allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Lou Lieto whose telephone number is (571) 272-2932. The examiner can normally be reached on Monday-Friday, 9am-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571)-272-0735. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Patent applicants with problems or questions regarding electronic images that can be viewed in the PAIR can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6

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